

943.586



# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Method and apparatus for making Casts of Parts of the Human Body

I, BRUNO HULLMANN, a citizen of the Federal German Republic of 21, Marktstrasse, Soltau, Hannover, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a method and apparatus for the production of casts of parts of the human body, in particular the foot.

A method and apparatus of this type has been proposed in which the part of the body of which a cast is to be made is pressed into a mass of loose magnetizable particles. The particles are then magnetized to form a rigid mass, so that when the part of the body, for example the foot, is removed, a fixed impression remains, which serves for the preparation of the cast.

This method and apparatus has a number of disadvantages. First, there is the disadvantage that only particles of ferromagnetic material can be used. Such materials are comparatively expensive and, moreover, heavy.

In addition, the side plates of the box construction which is to hold the particles are also made of magnetizable material, which considerably increases the total weight.

Finally, it is also advantageous to increase the already great weight further by the use of magnets.

The present invention according to one aspect, provides a method of making a cast of a part of the human body, in particular the foot, which comprises pressing said body part into a bed of loose material covered by a flexible sheet, and retaining the cast by subjecting it to sub-atmospheric air pressure.

The present invention, according to another aspect provides apparatus for performing this method, which comprises a box having a

chamber which contains said material and is closed on its upper side by a cover which can flex to the shape of the body part pressed thereon. 45

Preferably a second chamber is provided below the first-mentioned chamber, incorporating, or for connection to, a suction device and separated from the first chamber by a sheet of material which is pervious to air. 50

One of the two chambers is advantageously connected with the atmosphere by a ventilating valve.

One advantage of the method and apparatus of the present invention is that one is not bound to use any one particular type of loose material for receiving the impression or for the construction of the box. This makes it possible to use plastics materials which are convenient both with regard to the total weight and with regard to the total cost. 55

Quite apart from this, the complete arrangement of resistance switches for regulating the magnetic field is dispensed with in this case. 60

Although the sub-atmospheric pressure can be provided by means of an electrically-driven suction pump, the use of electrical energy can be completely dispensed with by using a manually-operated suction pump. 65

A further advantage resides in the fact that with the apparatus according to the invention, the suction device can be switched off after forming the impression. The ventilating valve separates the chambers from the atmosphere so that the sub-atmospheric pressure and consequently the impression as such are retained. 70

On the other hand, actuation of the valve causes one chamber to be ventilated and the impression in the mass of material is immediately destroyed. 75

One embodiment of the invention will now

[Price 4s. 6d.]

*requires electric pump*  
*material*  
*manually operated*  
*valve*  
*switch*  
*manually*

be particularly described with reference to the accompanying diagrammatic drawings, in which:—

Fig. 1 is a vertical section through the apparatus;

Fig. 2 is a plan view of the apparatus of Fig. 1;

Fig. 3 is a vertical section through the apparatus shown with a foot in position; and

Fig. 4 is a plan view of the apparatus showing the imprint of the foot.

As shown in Figs. 1 and 2 the apparatus comprises a box 1 closed at the top by a flexible cover 2 of rubber or other suitable material. The box 1 is divided into two chambers by a sheet 3 of a material which is pervious to air.

The upper chamber is filled with loose particles 4 of small dimensions, such for example as small balls of plastics material, while the lower chamber contains, or is connected to a device 5 for producing a sub-atmospheric pressure and which can be set into operation by means of a foot switch 6.

Advantageously, one of the two chambers is connected with the atmosphere by a ventilating valve, which is not shown in the drawing.

The mode of operation of the apparatus is as follows:—

When a cast is to be made, the naked foot is placed on the flexible cover 2 of the apparatus (Fig. 3). The foot switch 6 is actuated and the device 5 for producing a sub-atmospheric pressure is thus set into operation. By this means the particles 4 of small dimensions, e.g. small balls of plastics material, are subjected to a sub-atmospheric air pressure and a faithful impression of the foot is retained (Fig. 4). The impression of the foot obtained in this manner has a fixed shape, which can then be used as a mould for making a cast in a known manner.

When the impression is no longer required, it is simply necessary to ventilate the cham-

ber filled with balls, and the flexible cover 2 and the particles 4 then return to their original state.

It is then possible to repeat the operation for producing another cast in the manner described above.

#### WHAT WE CLAIM IS:—

1. A method of making a cast of a part of the human body, in particular a foot, which comprises pressing said body part into a bed of loose material covered by a flexible sheet, and retaining the cast by subjecting it to sub-atmospheric air pressure.

2. The method according to claim 1 wherein said material consists of small spherical particles.

3. The method according to claim 1 or claim 2 wherein said material consists of small particles of plastics material.

4. Apparatus for performing the method according to any preceding claim which comprises a box having a chamber which contains said material and is closed on its upper side by a cover which can flex to the shape of the body part pressed thereon.

5. Apparatus according to claim 4 having a second chamber below the first mentioned chamber, incorporating, or for connection to, a suction device and separated from the first chamber by a sheet of material which is pervious to air.

6. Apparatus according to claim 5 having a ventilating valve through which one of said chambers can be connected to atmosphere.

7. The method of, or apparatus for, making a cast of part of a human body, in particular a foot, said method or apparatus being substantially as described herein with reference to the accompanying drawings.

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Plastics material  
be made of  
plastics material

Remarks:

(1) New process,

(2) ...

(3) doesn't require a sheet of other material

(4) no ventilation chamber

(5) no chambers

(1) Clipping; ...  
(2) ...  
[claiming detail] shifting

valve through which ...  
connected to atmosphere

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original

operation  
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1 SHEET

# COMPLETE SPECIFICATION

*This drawing is a reproduction of  
the Original on a reduced scale*

Fig. 1

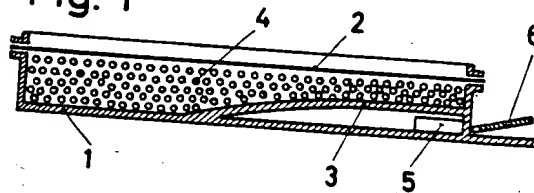


Fig. 2

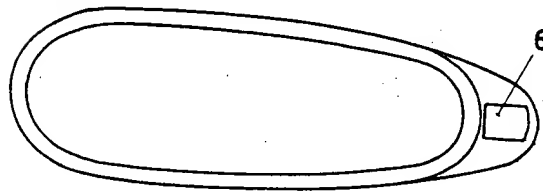


Fig. 3

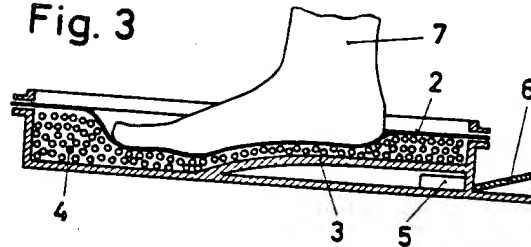


Fig. 4

